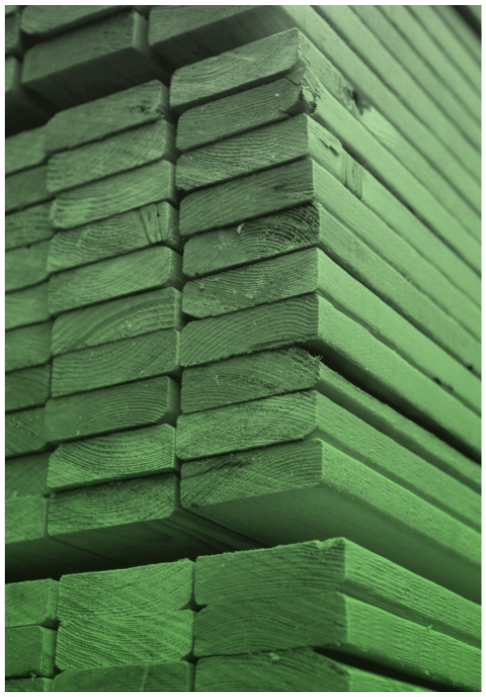
MANUFACTURING GREEN

Producing a Sustainable NYC



New York Industrial Retention Network (NYIRN) and
Industrial & Technology Assistance Corporation (ITAC)

MANUFACTURING GREEN

Producing a Sustainable NYC

June 2006

EXECUTIVE SUMMARY

New York City is on the road to sustainability! The construction of energy-efficient, environmentally-friendly green buildings is increasing. The City Council has passed laws incorporating environmental standards into the City's capital plan and mandated the procurement of environmentally-friendly goods and services. Finally, there is widespread public recognition of the need and benefits of investments based on economic and environmental impacts leading to a fundamental shift in our culture and economy.

Building Green: New Opportunities for NYC Manufacturers, a report released last year by NYIRN and ITAC, documented how the rise in green building construction is not a passing fad but a fundamental change in building design and construction. This shift is occurring for a variety of reasons. One critical factor is the development of a national standard, Leadership in Energy and Environmental Design (LEED). Created by a national non-profit, the U.S. Green Building Council, LEED provides a way to measure a building's implementation of defined green criteria. The LEED standard and the US Green Building Council have generated a significant amount of credible exposure and as a result, municipalities across the country are mandating the construction of green buildings in their communities. In NYC, the recent passage of Local Law 86 mandates that a certain portion of City funded projects meet LEED or LEED equivalent standards. As green buildings become more prevalent, the associated costs of ensuring a building's environmental performance are decreasing; this in turn helps drive the increase in green buildings. Furthermore, as energy costs continue to increase and the public's awareness that a building's energy consumption relates to global warming, green building practices are becoming more widespread.

A commitment to sustainable development will improve the quality of life for New York's residents and increase its competitiveness for New York's businesses. However, this transformation is still a work in progress. Critical to achieving this goal is strengthening the City's manufacturing sector by transforming it into a network of sustainable companies that produce environmentally-friendly products needed to construct and furnish the offices, schools and residences of a green New York.

There are strong market incentives for manufacturers in the construction supply chain to develop green products to meet the growing demand associated with green buildings. New York City architects and developers have a strong interest in finding local manufacturers to meet green building guidelines but also to capitalize on their proximity and quick delivery times. However, few of these potential consumers are aware of the many manufacturers located within their community.

New York companies need to act quickly and evaluate how they can best tap into this rich market before relationships in the green construction industry are solidified. This assessment will vary from company to company. For some it will only necessitate simple changes that a firm can implement on its own. For most of New York's small manufacturers though, it will require new types of assistance programs that will enable them to engage in more complex product and process alterations. Systematic citywide infrastructure changes that facilitate the City's overall shift towards sustainability will also support individual firm transitions to sustainability. As New York companies begin to penetrate the local market, there are national expansion opportunities companies can tap into as green construction increases across the country.

In this report, *Manufacturing Green: Producing A Sustainable NYC*, NYIRN and ITAC assess the New York City manufacturing sector's capacity to meet the growing demand for green building products and highlight the challenges many companies face in attempting to capture this market opportunity. The challenges fall into five major areas:

- **Difficulty generating awareness by architects, specifiers, contractors and other potential consumers regarding the availability of products manufactured in New York City;**
- **The structure of the manufacturing sector which tends to be composed of small businesses which lack the capacity to engage in substantial marketing efforts and to access major decision-makers;**
- **Lack of resources needed to tap into City, State and Federal programs designed to assist them with financing, R&D and other types of assistance;**

- **A mismatch between the scale of existing assistance programs and the companies wanting to apply and the complexity of most application processes; and**
- **Resistance by mature businesses in understanding that their business strategies need to adjust to changing market conditions and respond with new products, materials and processes.**

Based on surveys and interviews with firms, NYIRN and ITAC developed recommendations to address these challenges and help firms make the transition to succeed in the green marketplace. Many of the recommendations rely on models that have addressed other types of issues, or that already exist at the City or State level, and could be expanded or improved. The recommendations require actions at three different levels:

- **Individual firm assistance, both financial and technical expertise, provided on a one-on-one basis that will spur new product innovation, competitive advantages and improved quality thereby creating and retaining quality jobs for New Yorkers;**
- **Sector-based initiatives that will strengthen the entire supply chain servicing the construction industry with manufactured goods; and**
- **Citywide policies that are needed to provide the basic infrastructure to support sustainable manufacturing in New York City. Without these systematic changes, the City will not realize the full potential benefits of the green building movement, regardless of efforts by individual firms.**

The primary recommendations of the report are:

- **Executing a comprehensive marketing campaign to increase awareness about the wide spectrum of products manufactured within the five boroughs of New York City;**
- **Providing strategic planning, entrepreneurial development and financial assistance all aimed at helping firms realize the triple bottom line of sustainability: sustained financial growth while enhancing the local community and minimizing environmental impacts.**
- **Facilitating innovation and new product development by improving firms' access to existing and new State Research and Development resources and enabling firms to undertake such activities on their own;**
- **Creating new and improving existing government finance programs to help companies purchase new equipment that will enable new product lines; and**
- **Implementing City and State policies that strengthen the manufacturing sector and provide firms with a healthy business climate in which they can grow.**

This report will help policymakers understand that if the City is in fact committed to making the "Big Apple" a "Green Apple," a healthy manufacturing sector is at the core. While many of the Fortune 500 firms have already embraced the concepts of sustainability and developed plans to incorporate the concepts into their business activities, the path to sustainability is not as clear for the smaller, specialty manufacturers that help make New York City's economy diverse. If implemented, the recommended activities described in this report will help New York City's manufacturing sector penetrate the green marketplace and bring a greater amount of economic benefit to the City of New York.

INTRODUCTION

New York City is on the road to sustainability! This change is illustrated by an increase in green building construction in both the public and private sectors, the passing of a number of laws mandating the procurement of environmentally-friendly goods and services and significant investments by the private and non-profit sector in advancing environmental stewardship. Critical to this effort is strengthening the City's manufacturing sector by transforming it into a network of sustainable companies that produce environmentally-friendly products, and securing its place in the green market. As green building construction grows in the City, new markets open for local manufacturers and for products that minimize environmental impacts. Now is the time for New York manufacturers to meet this demand. However, for many New York firms this requires a change—for some a minor change, for others a fundamental shift in their business design. For all firms though, it requires an acknowledgement that green building construction is not a passing fad but a fundamental change in the way New York designs, renovates and constructs its skyline.

In June 2005, the New York Industrial Retention Network (NYIRN) and the Industrial & Technology Assistance Corporation (ITAC) released *Building Green: New Business Opportunities for NYC Manufacturers*,[1] which documented the emerging markets created by the rise in green, or high-performance, construction in New York City. That study concluded that there is a substantial demand for green building products but that cost, quality and other traditional competitive criteria still apply, and overtime, the environmental attributes may become essential. The study also found that manufacturers have a significant public relations problem: buyers do not perceive that there are locally manufactured products that could meet their demands, and consequently do not seek them out for bids.

This report, *Manufacturing Green: Producing a Sustainable NYC*, follows up on that initial study by exploring the major challenges local firms currently face and the types of programs that will allow them to take full advantage of green building opportunities. These initiatives cover a wide range of issues, from sales and marketing to technical and financial assistance and require implementation at the company, sector and regional levels.

There are currently over 1,700 New York City firms manufacturing a building-related product, employing 27,500 people and paying over $1 billion in wages.[2] These firms comprise almost 25% of the City's entire manufacturing sector. Presently, dozens of these firms produce products that have one or more positive environmental attributes. They are capitalizing on these emerging opportunities and many are achieving positive results. For example, there is a manufacturer of countertops made from recycled glass in Brooklyn as well as a producer of cork floor tiles in the Bronx. These new companies with high design products are getting substantial media attention and their sales are growing. New York City is also home to several furniture makers constructing high-end designs from sustainably harvested materials as well as lighting companies manufacturing energy-efficient systems. These established firms are also enjoying success in the green marketplace.

A variety of obstacles, however, impede other local firms from producing more environmentally-friendly products. Their challenges range from a lack of marketing resources to technical issues to difficulty overcoming the institutionalized culture of contractors and installers who prefer tried and true products and methods. However, the desire to overcome these obstacles is growing, as customers are demanding green products. For firms to address these challenges, outside support is required and with the right combination of assistance programs, New York City could become a center of green manufacturing. Several companies are already charting the way and the remaining 1,700 firms, with some assistance as outlined in this study, can soon follow.

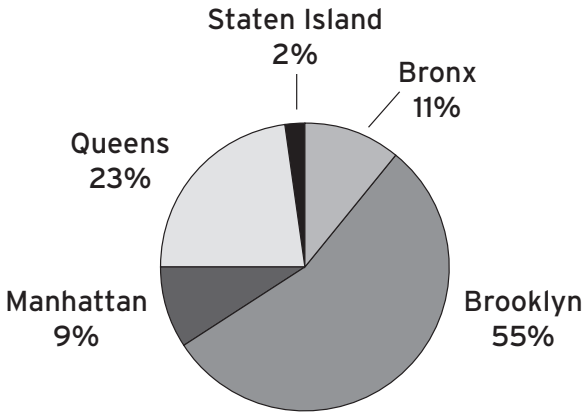
While the focus of this report is on the manufacturing sector's role in greening New York, a clear, comprehensive vision needs to be set for the entire City in order for New York to become a model of urban sustainability. The City must make investments in its recycling infrastructure so more companies can harvest locally recycled materials for use in their industrial processes. City commitments to renewable and clean ener-

1) The report is available at www.madeinnyc.org.
2) Firm and employee data: NYS Department of Labor, 2005; Wage data: NYS Department of Labor 2004.

gy systems, affordable housing and public, especially water-based, transportation would also enhance a green city. The recent passage of Local Law 86, which mandates that a portion of publicly financed buildings meet green building standards, and legislation that will increase the City's procurement of environmentally-friendly products can act as a catalyst for this comprehensive vision. Additionally, the City in collaboration with the US Environmental Protection Agency continues to sponsor a bi-annual competition to showcase New York City green projects. Linking these efforts under a comprehensive vision for a sustainable New York City would achieve greater and longer-lasting impact. In fact, SustainLane.com's 2005 ranking of U.S. cities, placed New York as the Number 1 Big City and Number 7 overall for being green. The lower overall ranking was reportedly due to New York's lack of an overall sustainability agenda. Tying all of these positive initiatives with a commitment to a green manufacturing sector would undoubtedly place New York City on the top of the list.

Chart 1

Location of Surveyed Manufacturers



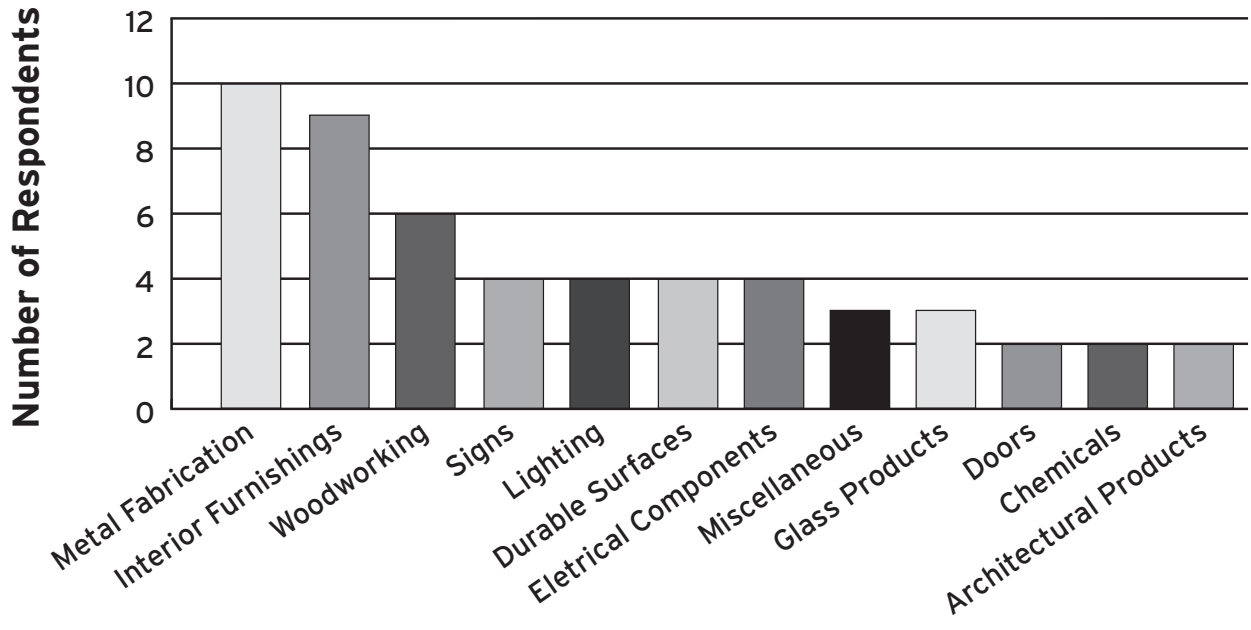
METHODOLOGY

NYIRN and ITAC conducted this follow-up study to determine the interest and capacity of existing NYC manufacturers in the construction supply chain to compete in the green marketplace. A secondary goal of the study was to ascertain the type of assistance needed, if any, to help firms start producing more environmentally-friendly products. The following steps were completed:

- **NYIRN and ITAC sent surveys to 1,500 NYC manufacturers of a building-related product via**

Chart 2

Type of Products Made by Surveyed Manufacturers



email, fax and mail. This included companies that produce products as varied as windows, paint and lighting fixtures as well as custom woodworkers and metalworkers. 53 companies, equaling a response rate of 3.5%, returned the survey.

- **NYIRN and ITAC conducted in-person interviews with 13 survey respondents to better understand the challenges and opportunities for NYC firms.**
- **NYIRN and ITAC met with several government and industry representatives to gain a comprehensive understanding of existing assistance programs and means of addressing the issues raised by firms in the surveys and interviews.**

Of the 53 New York City companies that responded to the survey, at least one company is located in each borough (See Chart 1). The respondents manufacture a wide range of products, with the largest number of respondents working in the metal fabrication sector and interior furnishings (See Chart 2).

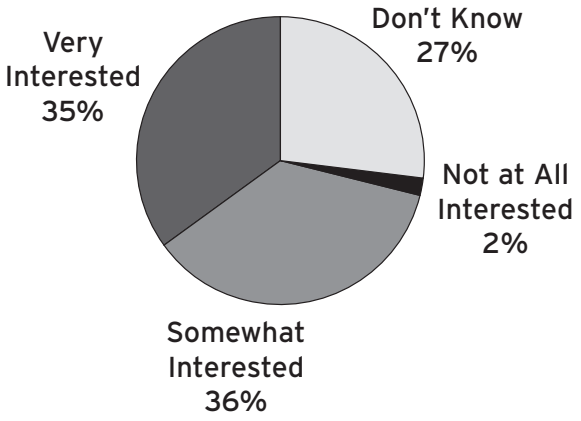
NEW YORK'S POTENTIAL GREEN MANUFACTURING BASE

As reported in the first study, *Building Green: New Business Opportunities for NYC Manufacturers*, 96% of surveyed architects, developers and other construction representatives said they expected the quantity of green building products their firms specify to either "increase significantly" or "increase somewhat" in the next three years. Similarly, 71% of surveyed manufacturers stated their customers were either "very interested" or "somewhat interested" in environmentally-friendly products. This interest clearly illustrates a shift in market demand (See Chart 3).

Responding to the emerging green market requires that manufacturers be flexible, willing and able to change. Taking advantage of new opportunities requires investments in research and development, innovative thinking and determination to stay abreast of the newest technologies and materials. The green marketplace often requires the introduction of new products, and alternatives to traditional building materials that have positive environmental attributes.

Chart 3

Surveyed Manufacturers: How Interested are Customers in the Environmental Features of Your Products?



Fortunately, the vast majority of survey respondents have some capacity for change built into their operations. 98% of survey respondents make custom products while only 2% of respondents stated they make only standardized items. Due to this high level of customization, companies are always introducing new goods into the market: 81% of respondents said they had introduced a new product or made significant changes to an existing product line within the past two years. Furthermore, New York City manufactures are overwhelmingly small companies: 84% of all New York City manufacturing firms employ less than 25 people.[3] This enables them to be more nimble and meet changing consumer demands than companies that make commodity products and have trouble competing in New York's high cost environment.

New York City firms are always looking for new opportunities. 96% of survey respondents said they were seeking new markets, both local and national (See Chart 4). Both green construction and the market for green products are growing nationwide and therefore national expansion by local firms can help meet this demand.

From a policy perspective, encouraging the evolution of existing companies to adapt to the green marketplace may be a better strategy then emphasizing

3) NY State Dept. of Labor, 2005.

NYC MANUFACTURERS HAVE THE PRODUCTION CAPACITY TO EXPAND BUT THEY NEED HELP TO MAKE IT GREEN

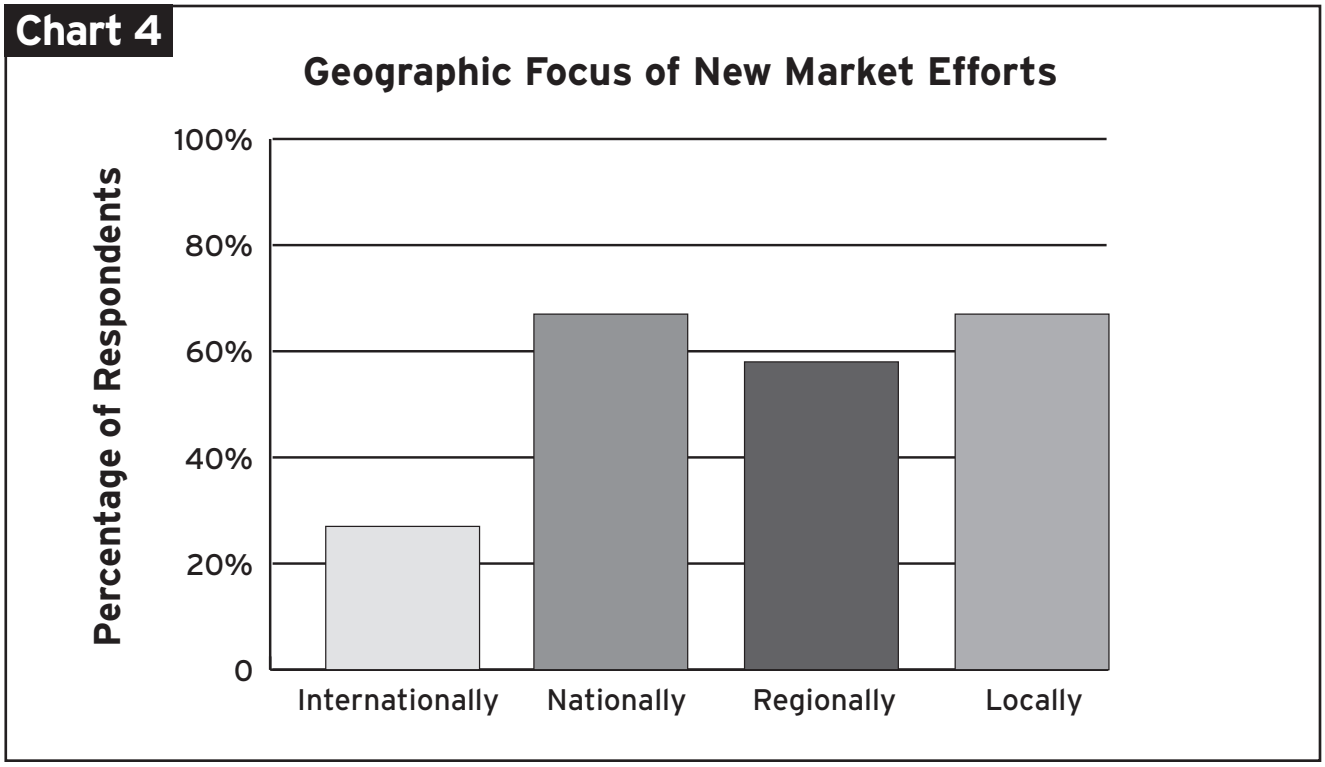
There are approximately 1,700 manufacturers in the five boroughs that produce a building related product. While only a handful of companies are currently producing products that would meet green building guidelines, the majority of firms have the capacity to increase production in general. All but one survey respondent stated they had the capacity to increase production. The remaining respondent stated that he/she was unsure whether the company could increase production.

Almost 30% of respondents said they had the capacity to increase by 100% or more, while another 20% said they could handle an increase in production by at least 50%. Therefore, 2/3 of the respondents could handle a doubling of their business if there was an increase in sales. In order for increased production to equate to an increase in green product production, companies require assistance as highlighted in this report.

the creation of new businesses. The first *Building Green* study found that potential buyers are often hesitant to test completely new products and companies. They indicated a preference for new products from firms with solid reputations, as compared to sourcing new products from startup companies. Helping existing companies that currently produce traditional building materials to adapt their existing products allows them to capitalize on their experience and reputations for quality products.

New York City firms are on the right path. 83% of respondents stated they already produce a product with at least one positive environmental feature. The most common were the use of recycled materials and materials free of toxins. However, during follow-up interviews, some companies were unable to articulate the

Chart 4



"green" features indicated by their survey responses. This indicates a lack of understanding as to what "green" means and that these companies require additional education on this issue.

55% of survey respondents stated they were interested in incorporating more environmental features into local products. An additional 32% said they might be interested. When asked why, responses ranged from "it's the right thing to do" to "it makes good business sense." Companies are recognizing that this is a major shift in construction trends and that in order for them to remain competitive, they need to update their business model.

UNDERSTANDING THE CHALLENGES

For some companies, beginning to produce green products will only require simple alterations to their current processes. However, for many firms, transitioning into the green marketplace is quite complex. It can require changes in the business plan, in manufacturing processes and certainly in marketing efforts. Each firm will have to evaluate their own products, operations and business practices to determine the appropriate strategy. As the green market evolves, and becomes more mainstream, consumers will make decisions about which products to buy based not only on the environmental performance of their goods, but by their overall approach to sustainability. The business will have to be "green in product and green in process."

Through the surveys and follow-up interviews, NY-IRN and ITAC were able to identify several specific challenges companies face when trying to transition into the green market or introducing new products in general: marketing and education; sales and distribution; technical and production obstacles; financing; and transitional issues.

A. Marketing and Education

The number one challenge New York manufacturing companies face when introducing new products is gain-

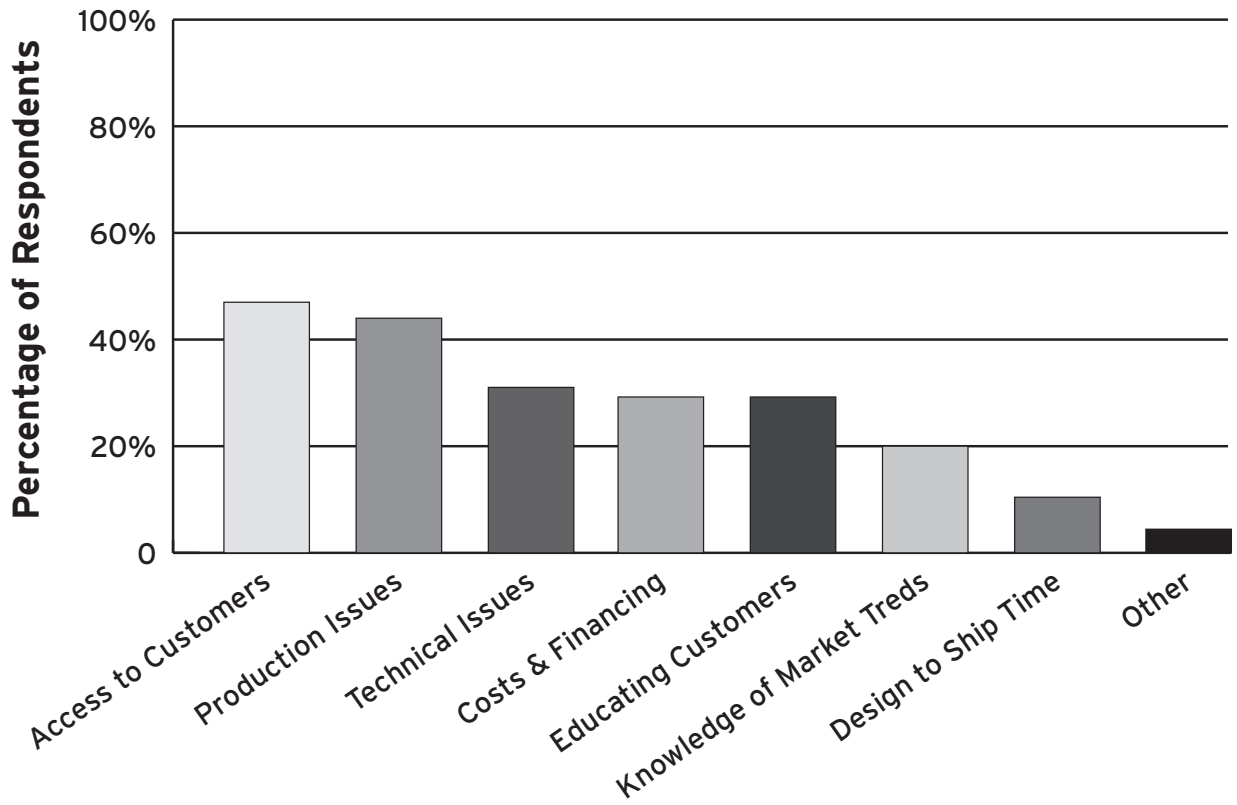
PAINT COMPANY STRUGGLES WITH INTRODUCING GREEN PRODUCT

Mercury Paint, a family owned paint manufacturer in Brooklyn, has been operating since 1947. The 80-employee firm produces high performance architectural, commercial and industrial finishes for both the public and private sector. Due to its strong in-house R & D facility, Mercury Paint has developed a specialty in unique coatings of oil, latex, low-VOC and zero-VOC paints and floor coloring.

With the rise in green construction, there has been a growing demand for paints with low- or zero-Volatile Organic Compounds (VOC). VOCs have negative human health and air quality impacts due to fume inhalation. However, contractors are not as familiar with zero-VOC paints and are often reluctant to use the product, even when it included in the architects' specifications. While zero-VOC paints do perform differently from other types of paint, contractors do not have to use more paint as is the common misconception. The biggest difference is that zero-VOC paints dry quicker than other types of paint and require contractors to expedite set up times. Contractor education efforts would improve the likelihood of the incorporation of this new application in a greater number of projects.

Mercury Paint also struggles because it does not have the name brand recognition of its global competitors. Mercury is working to improve its marketing position and raise its profile among the NYC green architecture and design community so that architects will specify them specifically or accept Mercury Paint as an "equivalent" product to its competitors.

Chart 5



ing access to potential customers (See Chart 5). Despite the fact that there are over 7,000 manufacturers in the five boroughs, over 1,700 of which produce a building-related product, most architects, specifiers, developers and contractors incorrectly believe that there is very little manufacturing in New York City. For example, when NYIRN and ITAC asked architects and designers what locally produced products they had used or specified for a recent project, very few could name a New York City firm. Nevertheless, all the architects and designers expressed interest in learning about more locally produced products.

Firms developing new products need assistance positioning themselves in this new niche market. More broadly, branding New York City as a source for manufactured products would benefit all local firms. Most companies interviewed supported the expansion of the "Made In NYC" brand as a means of achieving their goal of increasing their exposure to the architecture and design community, without requiring them to make an expensive investment on their own.[4]

Similarly, many companies, especially during the in-person interviews, said that educating customers about new products is challenging. A particular challenge was overcoming the resistance of contractors and installers, and educating them on how to properly install and use products. For example, applying toxic-free paints sometimes requires different set up systems and the installation of cork floor tiles is completely different than installing ceramic floor tiles. Similarly, some products cost more initially but have longer life spans, require less maintenance, have lower operating costs and require less frequent replacement. However, contractors have little incentive to try unfamiliar products or invest in higher priced products if the savings are post-construction. Aggressively edu-

4) **www.madeinnyc.org** is a free, online directory of NYC manufacturers created by NYIRN, ITAC and the Manufacturers Association of New York City.

cating the contractor community will ensure the success of new, local products entering the market.

B. Sales and Distribution

Another major challenge for local firms is gaining access to decision makers in the supply chain: architects, procurement personnel, contractors and the individual customer. While the property owners or developers often drive the decision-making process on green projects, a critical part of getting the sale in a construction project is being included in the architect's specifications. However, determined contractors can thwart even specified products. Creating and maintaining solid supply chain relationships is thus critical to increasing sales.

There was a wide range of sales models among study participants. Some firms rely on word-of-mouth, while others utilize sophisticated networks of sales representatives that "knock on the doors" of the major players in the construction industry. The companies who could afford to do the latter tended to be the ones that made products for large-scale projects, both commercial and residential. The companies that produced more "one of a kind" products tended to rely solely on their own personal relationships and struggled with penetrating a larger market. All participants, regardless of size, desire "face time" with the "decision makers." Obtaining this face time was a major challenge for most firms. All agreed the larger industry-wide trade shows were too expensive and rarely resulted in increased sales. Due to the large scale of construction projects in NYC, global competitors dedicate vast resources to "buy" such face time with individual design firms working on big projects. The smaller firms do not have the dedicated sales resources or sophisticated presentation materials necessary for sales pitches to these customers even though they have the capability to deliver on these large jobs.

When asked what types of assistance would help companies improve their presence in the green marketplace, sales and marketing ranked highest at 49% (See Chart 6). Those companies relying on word of mouth need to evaluate if more proactive sales models will help them grow, and if so, find the right model for their individual needs and abilities. Broader efforts, aimed at raising the Made In NYC brand and facilitating networking, will increase New York City's market share and support individual firm activity.

C. Technical and Production Issues

There are a variety of technical (i.e. formulas, materials, quality control) and production related (i.e. efficiency, timing, capacity) issues that can arise when developing and introducing new products into the marketplace. While survey respondents ranked the need for assistance with technical and production related issues highly, they were reluctant to discuss many aspects of these issues during in-person interviews.

LIGHTING COMPANY ILLUMINATES END OF THE LINE ISSUES

Edison Price Lighting is a second-generation business in Long Island City, Queens, specializing in specification grade architectural lighting for commercial, residential and museum applications.

Edison Price Lighting's fixtures are more energy-efficient and have greater optical control than their competitors, requiring the installation of fewer fixtures. Their innovative design comes at a greater price per unit, but they are more cost effective overall since one needs fewer fixtures and they last longer and are more energy efficient. However, lighting designers anticipate that most contractors will opt for the cheapest price-per-unit fixtures, and design accordingly by stipulating a larger number of fixtures. In such a circumstance, by selecting Edison Price's more energy-efficient fixtures a building will have excessive lighting and wasted energy. Unless the designer plans for efficient systems, specifies Edison Lighting and refuses to accept substitutes, this cycle of designing and installing lower performing products will continue.

BROOKLYN COMPANY RESEARCHES, DEVELOPS & SUCCEEDS

IceStone is a new company based in the Brooklyn Navy Yard. Their 32 employees are responsible for producing a durable surface made from 75% recycled glass and 25% concrete that is used for countertops, flooring and shower surrounds. The product is available in two dozen colors in standard size slabs. The company's philosophy is rooted in sustainability, with a strong emphasis on workforce development and environmental activism.

IceStone's unique composite of materials creates some interesting production challenges. While there are a number of experts around the country who can advise on technical issues related to working with cement or glass fabrication, there are few who are familiar with the properties of their composite material. Due to the unique features of this "new" material, figuring out how to perfect production required ingenuity and systematic trial and error. Everything from equipment selection to curing times had to be evaluated based on data available for the individual components of their product, then custom tested for their composite material, which often reacted quite differently than the raw materials individually.

Companies did address a complementary issue: the need for Research & Development (R&D) assistance to enable them to experiment with new materials. Woodworkers, for example, may be interested in incorporating non-toxic glues and adhesives and/or sustainably-harvested wood species (such as bamboo) or wood substitutes (such as wheat board) but are reluctant to use alternative materials. This reluctance is primarily due to firms' difficulty in gaining extensive knowledge of material properties and experience operating appropriate equipment to commit to using these materials in their products.

Substituting traditional building materials with more environmentally-friendly ones is often an important step. Many of the companies indicated that they are constantly introducing new products, because their products are custom made. However, they are generally using the same materials and production processes, just altering the design. There has been a considerable amount of research done by the federal government and university centers on material substitution and process changes. While this information is useful, each company is different and therefore will need to conduct their own tailored research and development in order to launch new products.

Several companies have been successful in creating brand new products. One motivating factor was a fear that their primary products were losing market share due to undesirable raw materials. A contrasting motivating factor was a desire to be proactive and innovative in establishing a new market niche.

The experiences of these companies indicate that firms interested in new product development need to create a culture and infrastructure that support innovation and rapid change, both in products and processes, to meet changing customer demands. To develop new products they did extensive R&D, used outside resources and labs and made significant investments. However, none of these companies tapped into New York State's vast network of academic institutions and research facilities, established specifically to spur economic growth within existing New York companies. Developing a mechanism to better link these institutions with firms is necessary for small companies to benefit from the State's investment.

Several companies were also struggling with whether to pay to certify their products. For certain categories of products, certifications are virtually required by the market such as having wood certified by the Forest Stewardship Council (driven by the US Green Building Council LEED guideline requirement) or cleaning products certified by Green Seal. These certifications are often very costly and require a significant amount of paperwork and annual upkeep. On the other hand, certifying a product under the Environmental Protection Agency's Ener-

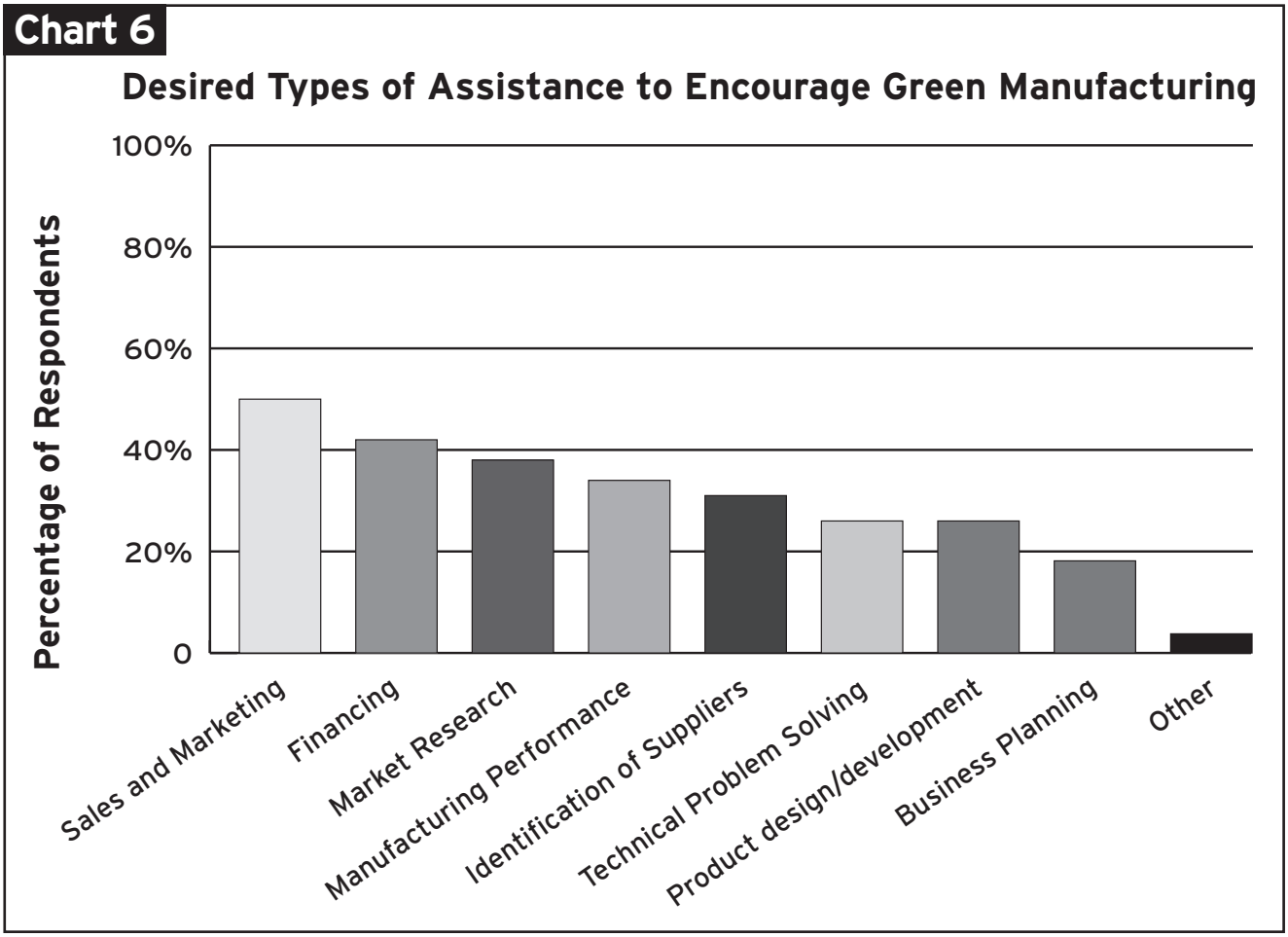
gy Star program is less important, as long as the company clearly documents that the product meets the Energy Star guidelines. Firms need assistance in determining whether certification is necessary, and if so, financial assistance to help cover the fees so they can market their products as truly meeting green specifications.

D. Product Costs and Financing

Keeping products cost-competitive is always a challenge for New York firms because of the high costs associated with operating in the five boroughs. Almost a third of survey respondents (29%) stated that costs and financing were a challenge when introducing new products and 42% said they were interested in some type of financial assistance program (See Chart 6). The Environmental Services Unit's Capital Grant program, administered by Empire State Development (ESD), is appropriate for some companies looking to reduce pollution in their manufacturing process through new equipment. This program, while extremely helpful to companies looking to buy new equipment, does not pay for equipment that will improve the environmental impacts of products during product installation, use, maintenance and/or disposal and often requires investment thresholds beyond what most firms can afford. A shift may be on the horizon: legislation is currently pending in Albany that would help companies invest in producing greener products. If created, this program, in combination with the existing ESD initiatives, will provide firms considerably more options when looking to finance new equipment for product development.

Complex applications also inhibit firms from accessing government incentives. Management of these small New York City businesses rarely has the time to fill out extensive paperwork. Reluctance multiplies for competitive programs for which there is no predictability in the award amount or approval. Specifically, New York State Energy Research Authority's (NYSERDA) grants, while accessed by some firms, are often too time consuming to apply for and have too much uncertainty to justify the

Chart 6



INVESTING IN GREEN TAKES GREEN

After 70 years of manufacturing tempered and non-tempered glass primarily for the shower door business, Colonial Mirror & Glass, based in Williamsburg, Brooklyn, is now making a major investment to tap into the green building market. The 50-person company is purchasing over $2 million in new equipment to produce a new line of insulated glass products for structural applications, such as doors and windows. The new products will achieve a high degree of energy-efficiency, making it suitable for green buildings.

Colonial decided to purchase the new equipment and launch the new line in recognition of growing customer demand for insulated glass. To assist in this transition, Colonial has sought out government grants and financial assistance but has been frustrated by past experiences with complex application processes and the long time between finding out they had been approved and actually receiving the funding. While there are some government programs that will help Colonial Mirror, and other companies looking to purchase new equipment to launch new products, the programs need to be tailored to the scale and needs of New York's smaller companies in order to help facilitate these significant investments. The government has made great strides in instituting large tax credits and other incentives for the development of green buildings, but additional resources are needed to help the manufacturers in the construction supply chain keep pace.

investment of management's time and energy.

Several companies interviewed expressed interest in establishing financial incentives for architects and developers to specify New York City products. While this is very difficult to do in the private sector, there are ways to encourage local procurement through public contracts. Municipalities in New York State cannot limit award contracts to local firms; however, there are instances when the City and State have encouraged local sales by including local procurement preferences in bidding documents. For example, the City recently awarded a contract for the construction of newsstands, bus stop shelters and other street furniture based not only on the financial return offered to the City but on a commitment to use local manufacturers to fabricate the street furniture.

E. Business Transition Issues

A new or revised business plan is often a good idea when introducing new products and entering new markets. Several participants described their struggle with tapping into markets with new products without disrupting existing operations. Had the companies revised their business plans to address these issues, they would have most likely been more successful in their efforts. However, the term "business plan" did not resonate with the established companies as they viewed it as appropriate

CONTEMPLATING A CLEAN SLATE

American Cleaning Solutions, a 75 year-old manufacturer of cleaning products, is considering a major change in their business model because of expected changes in their marketplace. American Cleaning noted that new City and State laws now require green cleaning products in schools and government buildings and realized that without such products they would not be able to compete. The 50-person company has certified a wax stripper, a floor finish and several cleaners under the industry respected Green Seal standard and is trying to figure out how to introduce these green products without disrupting sales of the products it has been manufacturing for generations.

only for new companies. Only 17% of survey respondents stated they were interested in assistance with business planning despite the fact that most companies needed to rethink their business models in terms of markets, messaging and competitive advantages. Those that responded positively indicated interest in attending tailored workshops, focused on business model review and strategies for launching new products.

FINDING SOLUTIONS

New York City firms are recognizing the green marketplace provides real opportunities. Most firms however, require some assistance to capitalize on these prospects. Below are extensive recommendations to help New York City's manufacturers reach their full potential, to nurture a sustainable manufacturing sector and to retain and create "green collar jobs."

Trade associations, economic development organizations and other industry support groups can help in the implementation. Some recommendations pertain to providing direct assistance to individual businesses or groups of businesses provided by technical assistance experts. Other recommendations pertain to City and State policies and protocols to promote sustainable manufacturing. A matrix at the end of the recommendations summarizes the level of implementation.

1. **Establish a marketing program for New York City firms.**

   Marketing assistance is the highest priority for New York manufacturers and presents a significant opportunity for public intervention. Both the manufacturers and their potential customers want to connect more. The issue is "how?"

   Several components to the proposed marketing assistance program are being brought together under the Made In NYC banner. NYIRN and ITAC established the Made in NYC program after the September 11th attacks in an effort to stimulate demand for local products and create local jobs. The core of the program is an online database of self-registered, local manufacturers that serves as a business-to-business directory for New York companies. There are currently more then 650 companies registered on the site. Reconfiguring the site to provide information on the green features of participating manufacturers and their products, and expanding its marketing to establish broader brand recognition would be an important step in strengthening the green supply chain.

   NYIRN and ITAC recommend the following activities as part of the marketing campaign:

   a. **Upgrade the current Made In NYC website (www.madeinnyc.org)** to make it more user-friendly, improve the database functions and expand the number of registered firms. An added feature will clearly indicate those companies that have committed to sustainability goals, such as improving the environmental impacts of their products and processes.
   b. **Initiate a Made In NYC marketing collaboration** with the New York City Chapters of the American Institute of Architects and the US Green Building Council. Elements of the collaboration would include periodic emails to the members of these two organizations discussing projects and their local sources, new products developed by local manufacturers, and events; participation at local trade shows and events; and media communications including trade outlets such as Environmental Building News.
   c. **Host small "meet and greet" events, sponsored by Made In NYC** introducing local architects, designers and contractors to local manufacturers in an intimate environment. Many organizations currently host seminars and workshops for architects, contractors and developers that Made In NYC companies could exhibit their products at in addition to participating in the discussion. This will allow the design community to become more familiar with local products and will provide manufacturers with real time feedback on the products in demand.
   d. **Continue to promote the benefits of local procurement** from an economic and environmental perspective, through articles, press and public policy.
   e. **Assist individual architects, contractors and others seeking to identify and source local manufacturers.**

2. **Tailor Direct Business Assistance towards helping firms make sustainable transitions (including products, process and culture).**

In order to retain their competitiveness, firms need to make the transition to being sustainable businesses without jeopardizing their bottom lines. As the green marketplace matures, and the demand for green products becomes more mainstream and more competitive, consumers will evaluate companies and make their purchasing decisions not only on price but also on the attributes of both the products and the companies. NYIRN and ITAC recommend the following strategies:

a. **Provide firms with in-depth, one-on-one sales and marketing assistance** to help them penetrate the growing green design market. Companies need to understand how a change in their product lines will influence their marketing strategies. Furthermore, real estate projects in New York City tend to be large, and as such attract fierce competition from global companies. For local firms to compete, they need to improve their visibility before New York City architecture and construction firms and determine the best sales model and marketing approach for this marketplace.

b. **Promote/encourage firms to write business or strategic plans.** Firms could enroll in Fast Track, a business planning program offered by ITAC, which is tailored towards entrepreneurs who have great ideas about new products or ways to improve the environmental performance of existing products, but need some assistance in developing the skills and strategies to execute those visions. In addition, each company could undergo a "sustainability assessment," resulting in a comprehensive work plan with clear goals for workforce development, long-term financial profitability, production changes and marketing so the company can best evolve to meet market demand.

c. **Work with the city's business service entities** to integrate issues of sustainability and how the growing green market will impact local firms into the larger network of city business assistance programs. The Business Solution Centers, Industrial Business Zone Administrators and the City's network of Local Development Corporations work with hundreds of firms a year on a variety of issues. When working with firms, retaining a competitive edge through new markets should be central to the discussions.

d. **Launch a series of seminars or workshops to educate managers and workers about sustainable development.** Being green requires incorporation of a new set of principles throughout the workplace. A significant event that is a departure from ordinary practice, such as a company-wide workshop, can help impress upon managers and workers throughout the company the importance of the shift to sustainable practices.

3. **Facilitate Product Research and Development for NYC firms.**

Investing in Research & Development is extremely time-consuming and costly but necessary when working with new materials and creating new products. To encourage this type of investment, companies need to take advantage of programs that make product research more accessible and cost-effective. NYIRN and ITAC recommend the following strategies:

a. **Improve manufacturers awareness of and access to the existing New York State funded testing and research centers** as a mechanism to develop new materials, processes and products. New York State has made significant investments to encourage greater technological and economic collaboration between New York State industries and research universities. This infrastructure can help companies explore new materials and processes to create new green products. For example, New York State created Centers for Advanced Technology to facilitate the transfer of technology from New York's top research universities into commercially viable products produced in the private sector. However, none of the companies interviewed for this report were familiar with the university resources. New York manufacturers need a better understanding of the capabilities of these facilities and information about tapping into them. Access to these programs needs to be straightforward and widely publicized.

b. **Facilitate and increase number of companies applying for existing state and federal R & D assistance programs.** Many companies

are not aware of the variety of programs available to assist them in research and development activities. These programs facilitate research in manufacturing, engineering, quality assurance, marketing, purchasing and information technology, all of which are important activities for companies looking to create new products. However, programs such as the Small Business Innovation Research program, the Space Alliance Technology Outreach Program, New York State Technology Transfer Incentive Program and R & D tax credits are helpful but not adequately marketed. Similarly, many of these programs have complex application processes and require companies to dedicate a significant amount of time without clear indications of whether receiving the funding is probable. Clearer guidelines with streamlined application processes that are tailored to smaller firms will help companies access these programs and benefit from the government's investment.

c. **Provide a testing/training center for new, environmentally friendly materials** so that NYC manufacturers can become comfortable with the materials without committing scarce resources. NYIRN and ITAC recommend conducting a feasibility study for the creation of a testing facility. Possible locations could include the Carpenter's Union training center, the new Construction High School set to open in 2007 in Queens or NY Designs at LaGuardia Community College.

d. **Minimize certification fees to ensure that New York small companies can compete in the global marketplace and in their own backyard.** In order to verify environmental claims, some industries are developing certification requirements specific to a particular environmental impact or product. Certification is particularly useful for companies that are in the early stages of green marketing and operations and need to prove their environmental commitment, but it can be quite expensive. Overcoming this barrier is especially important because local manufacturers tend to be small, family owned firms while their customers (consisting of real estate developers, management companies, institutions and government agencies) are among the largest in the country, relying heavily on performance standards and certifications to ensure consistent purchasing across their own organization. Providing New York City manufacturers with certification assistance will improve their competitiveness in the green marketplace. One option would be to work with the certification entities to develop a lower-cost certification based on the size of the company (some already have sliding-scale fees, but this needs to be expanded).

4. Provide new/improved financial tools for NYC firms to purchase new equipment and remain cost-competitive.

New York City is an expensive place to manufacture goods and in order to make products cost-competitive with those made in other regions, the City and State must tailor incentives to spur new products and increase investment. Policy makers must take note of the differing needs between firms in New York City and larger firms in other areas of New York State and modify programs accordingly. NYIRN and ITAC recommend the following incentives:

a. **Improve New York manufacturers' access to State incentives that help companies invest in capital equipment** that will improve the environmental impacts of production processes. Currently both ESD and NYSERDA offer grants to partially cover investment in capital equipment. Unfortunately, smaller NYC firms have a hard time accessing these funds for several reasons: lack of resources to dedicate to the application process; mismatch in the scale of their equipment needs or ability to meet performance thresholds required by incentive programs; and lack of understanding of the potential of new, modern equipment to achieve beneficial outcomes. By reconfiguring these programs so that they are appropriate for the scale and needs of New York small-to-medium sized manufacturers and by streamlining the application processes, more firms will benefit. Finally, improving the visibility of successful case studies of New York firms working with existing programs will help companies realize the benefits of these incentive programs.

b. **Create a tax credit to encourage new equipment that improves a company's environmental performance.** The City should offer a credit against a company's corporate income tax for equipment purchases that result in an increase in energy-efficiency, use of recycled materials and/or reduce pollution in industrial processes and products. City Council Speaker Quinn proposed a tax credit of this nature in her official response to the Mayor's 2006-2007 budget.

5. Work to establish pro-urban manufacturing policies to facilitate production in New York City.

The City must develop a comprehensive sustainability vision for New York so it can fully realize the full benefits that increased green construction can have on the local economy. In terms of manufacturing, the Mayor's Industrial Policy, announced in January 2005, has improved the climate for local manufacturing, but more is required. NYIRN and ITAC recommend the following initiatives to maximize the economic benefits of green construction:

a. **Add local manufacturing component to Local Law 86 regulations.** The latest version of LEED, which is cited in Local Law 86, awards points for products that are made from materials harvested within a 500-mile radius but no longer for being manufactured within a 500-mile radius of the building site. The latter was the case in earlier versions of the guidelines. This poses a greater challenge to urban manufacturing firms in general because of the lower likelihood that the materials will be "harvested" locally. The City can realize tremendous economic benefit by encouraging the use of locally manufactured products, regardless of raw material sources.

b. **Encourage the City of New York to include points for local procurement in their Request for Proposals (RFPs)** for contracts ranging from cleaning supplies to paint to construction projects. While it is illegal in New York State to mandate the procurement of goods and services based on production location, there is no restriction on weighing such characteristics in a RFP response. When evaluating RFPs, generally a point-based system includes criteria such as quality, budget, and schedule. "Locally produced" criteria could be awarded a small number of points so when deciding between two competitive products, the local product would be given a slight advantage.

c. **Improve and expand infrastructure for recycled materials** so that manufacturers can reclaim, process and ultimately incorporate recyclable waste into new products made here in New York. Doing so would retain the economic value of the waste material generated and reduce the costs and impacts of exporting our waste. It would also provide feedstock for eco-entrepreneurs to produce local items and help companies contribute to the new locally-harvested point in LEED. For example, many new building products incorporate recycled paper, glass and wood. Currently entrepreneurs looking to make these new products have to buy the waste materials from out-of-state locations because there is no infrastructure to reclaim these materials from the NYC waste stream and process them sufficiently. If the City had improved infrastructure for waste – both residential and commercial – there would be numerous economic and environmental benefits realized.

d. **Strengthen zoning in designated industrial areas to maintain a healthy manufacturing sector.** The City faces a challenge in balancing the space needs for affordable housing, open space, community facilities, commercial activities and manufacturing. Since residential real estate tends to have a much higher value per square foot, when property owners have a choice between industrial uses and residential, they choose residential projects. However, if NYC is committed to preserving its diversity in culture and class and continuing to provide opportunities to new immigrants, it must provide for its industrial sector and the middle class jobs it supports. Stronger zoning tools in dense industrial areas will create real estate stability so companies will remain, invest and add jobs. Without this stability, the City will lose manufacturing jobs, and their economic benefits.

RECOMMENDATION MATRIX

Recommendation Description	Level of Response: Individual Business Assistance	Sectoral Initiative	NYC Infrastructure
1. Establish A Marketing Program For NYC Firms			
a. Upgrade The Current Made In NYC Website		✓	
b. Initiate A Collaborative Marketing Campaign		✓	
c. Made In NYC Sponsored "Meet And Greet" Events	✓	✓	
d. Promotion Of The Benefits Of Local Procurement		✓	✓
e. Assist In Sourcing Efforts	✓	✓	
2. Direct Business Assistance For Firms			
a. Provide Firms With In-Depth Sales And Marketing Assistance	✓		
b. Promote Strategic Business Plans	✓		
c. Help Service Providers Understand and Promote Sustainability		✓	✓
d. Company Sustainability Workshops	✓	✓	
3. Facilitate Product Research And Development For NYC Firms			
a. Improve Manufactures Awareness Of And Access To Existing Resources	✓	✓	
b. Facilitate Firm Applying For Existing State And Federal R & D Assistance Programs	✓	✓	
c. Provide A Testing/Training Center For New, Environmentally Friendly Materials	✓	✓	✓
d. Minimize Certification Fees	✓	✓	
4. Provide New/Improved Financial Tools For NYC Firms To Purchase New Equipment			
a. Improve NYC Manufacturers' Access To State Programs	✓	✓	
b. Create A Tax Credit To Encourage New Equipment That Improves A Company's Environmental Performance.	✓		✓
5. Work To Establish Pro-Urban Manufacturing Policies To Facilitate Production In NYC			
a. Add Local Manufacturing Component To Local Law 86 Regulations.		✓	✓
b. Encourage The City To Include Points For Local Procurement In (RFPs)			✓
c. Improve And Expand Infrastructure For Recycling	✓		✓
d. Strengthen Zoning In Designated Industrial Areas To Maintain A Healthy Manufacturing Sector.			✓

ACKNOWLEDGEMENTS:

Special thanks to the New York City Council, (in particular, Speaker Christine Quinn and Chair of the Environmental Protection Committee James Gennaro), Empire State Development's Environmental Services Unit, New York State Assembly (in particular, Speaker Sheldon Silver), Bernard F. & Alva B. Gimbel Foundation, and JP Morgan Chase who made this work possible.

Thank you to New York City Apollo Alliance and the New York State Environmental Business Association for their support in this effort. Thank you to all of the survey participants and those companies and individuals who shared their experiences with us so that we could better understand the potential for a green manufacturing sector in New York City.

Front Cover Photo Credit: Globus Cork (Bottom Right).

About NYIRN: NYIRN is a citywide economic development organization that promotes a diverse economy that provides employment and entrepreneurial opportunities for all New Yorkers by strengthening New York City's manufacturing sector, based on principles of economic and environmental justice and sustainability. For more information, contact Jen Becker at 212-404-6990 x12 or jbecker@nyirn.org.

About ITAC: The Industrial and Technology Assistance Corporation (ITAC) provides in-depth, one-on-one technical assistance for New York City manufacturing and technology firms to help them stay competitive in the marketplace. ITAC combines education, consulting, training and research into a series of programs designed to support the growth of local technology and manufacturing firms. For more information, contact Stefanie Feldman at 212-442-5219 or sfeldman@itac.org.

ITAC receives significant financial support from the New York State Office of Science, Technology and Academic Research (NYSTAR), New York's high-technology economic development agency, and the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP). ITAC serves as the NYSTAR designated Regional Technology Development Center for New York City and is one of nearly 350 MEP locations across the country.

About Made In NYC: Made In NYC is a joint program between NYIRN, ITAC and the Manufacturers Association of New York City that encourages businesses to purchase goods made in New York City, stimulating demand and job growth in the manufacturing sector. The program includes an online business-to-business database (www.madeinnyc.org) and a service to locate manufacturers not already listed on the website.

For more information about the green building market and the survey questionnaire and responses conducted for this report, go to www.madeinnyc.org.

New York Industrial Retention Network

11 Park Place · Suite 914 · New York, NY 10007 · 212-404-6990 · Fax: 212-404-6999 · www.nyirn.org

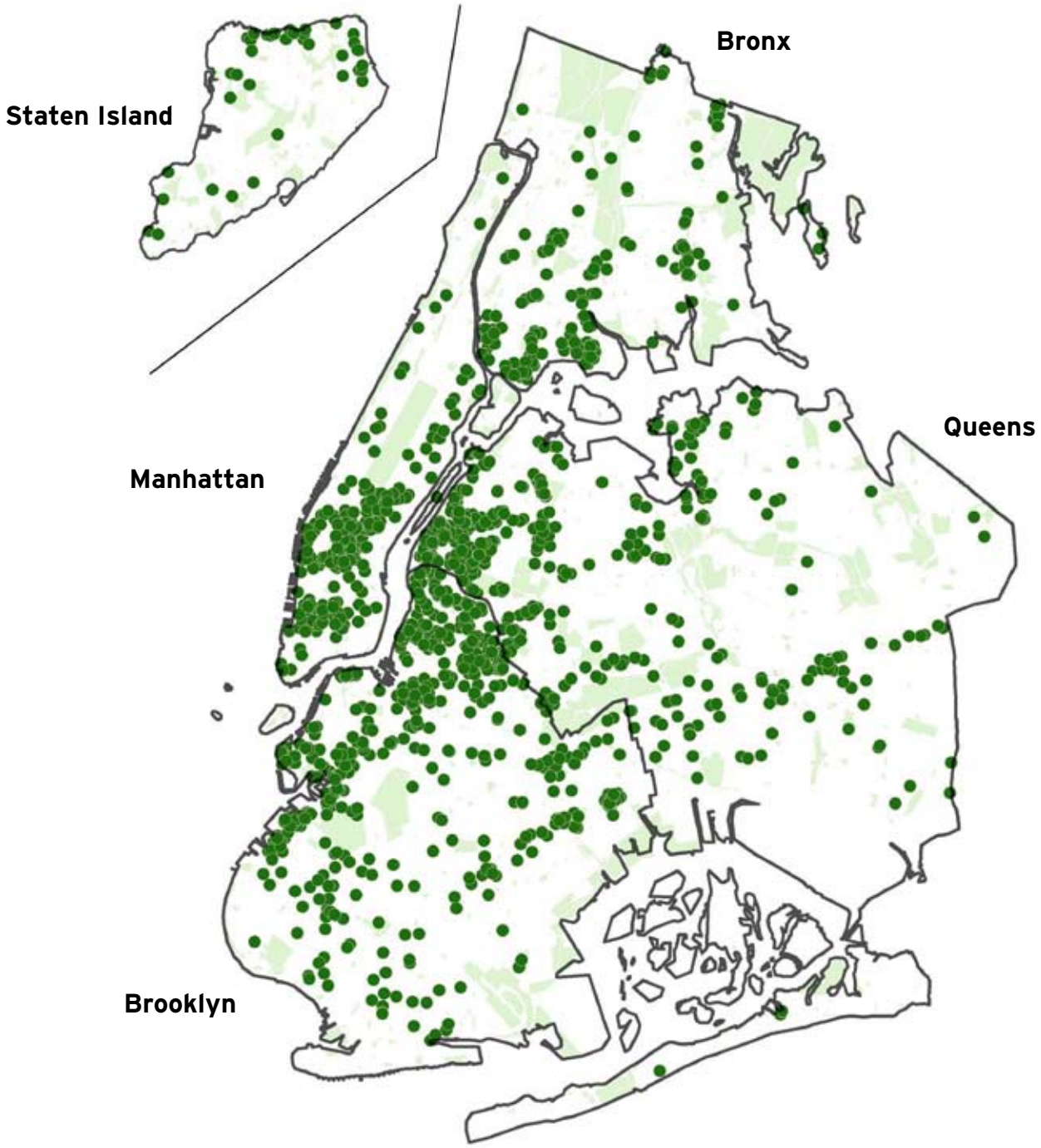
ITAC
INDUSTRIAL + TECHNOLOGY ASSISTANCE CORPORATION

253 Broadway · Rm. 302 · New York, NY 10007-2300 · 212-442-2990 · Fax: 212-442-4567 · www.itac.org

MADE IN NYC

11 Park Place · Suite 914 · New York, NY 10007 · 212-404-6990 · Fax: 212-404-6999 · www.madeinnyc.org

NEW YORK CITY MANUFACTURERS OF BUILDING-RELATED PRODUCTS



Source: NYIRN, 2006

MADE IN NYC